

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Introduction to telecommunications		Code 1010314441010322110
Field of study Power Engineering	Profile of study (general academic, practical) general academic	Year /Semester 2 / 4
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 15 Classes: - Laboratory: - Project/seminars: -		No. of credits 2
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) university-wide
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 2 100%
Responsible for subject / lecturer: dr inż. Jerzy Frąckowiak email: jerzy.frackowiak@put.poznan.pl tel. 508050168 Wydział Elektryczny ul. Piotrowo 3A 60-965 Poznań		Responsible for subject / lecturer: dr inż. Jerzy Frąckowiak email: jerzy.frackowiak@put.poznan.pl tel. 508050168 Wydział Elektryczny ul. Piotrowo 3A 60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge of mathematics and physics.
2	Skills	Ability of effective self-education in the field connected with the chosen field of study.
3	Social competencies	Awareness of the need to broaden their competencies, willingness to cooperate within the team.
Assumptions and objectives of the course: Understanding theoretical and practical issues related to basic information transmission techniques in wired and wireless telecommunications systems. Introduction to electromagnetic waves, antennas and radio transmissions.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Basic concepts of signal theory are their coding in data transmission - [K_U19 +, K_U21 +] 2. Features of the most important elements of wireless telecommunication systems - [-] 3. Structure of antennas and their characteristics - [-] 4. Examples of using radio waves, depending on their frequency - [-]		
Skills:		
1. Antenna selection depending on the frequency range used - [K_U19 +, K_U21 +] 2. Determining sampling times and quantization levels - [-]		
Social competencies:		
1. The ability to define needs from telecommunication with IT specialists - [K_K04 ++, K_K05 +]		
Assessment methods of study outcomes		
Ocena wiedzy i umiejętności na zaliczeniu pisemnym.		
Course description		

<p>Introduction to information theory, types of telecommunications systems, Analog and digital signals, spectral representation of signals. Analog and digital modulation techniques. Introduction to electromagnetic waves and antennas.</p>		
<p>Basic bibliography: 1. Szóstka J.; Fale i anteny&#38;#34;, WKŁ, Warszawa 2009 2. Gotfryd M.; Podstawy telekomunikacji. Telekomunikacja analogowa i cyfrowa, Oficyna Wyd. Politechniki Rzeszowskiej, Rzeszów 2010</p>		
<p>Additional bibliography: 1. Szabatin J., Podstawy teorii sygnałów&#38;#34;, WKŁ, Warszawa 2007 2. Haykin S., Systemy telekomunikacyjne&#38;#34;, Cz. I, WKŁ, Warszawa 2004</p>		
<p>Result of average student's workload</p>		
<p>Activity</p>		<p>Time (working hours)</p>
<p>1. Lecture</p>		<p>15</p>
<p>2. Consultations</p>		<p>5</p>
<p>3. Preparation to pass the lecture</p>		<p>25</p>
<p>Student's workload</p>		
<p>Source of workload</p>	<p>hours</p>	<p>ECTS</p>
<p>Total workload</p>	<p>45</p>	<p>2</p>
<p>Contact hours</p>	<p>20</p>	<p>1</p>
<p>Practical activities</p>	<p>0</p>	<p>0</p>